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THE SCHOOL REVIEW

A JOURNAL OF SECONDARY EDUCATION

NATIONAL UNIFORMITY IN SECONDARY INSTRUCTION.

At the meeting of the Michigan Schoolmasters' Club, December 1, 1894, the Unification of Requirements for admission to American universities was discussed by four secondary teachers, representing the needs and wishes of large and small high schools, academies, and normal schools; by twelve presidents of universities (letters); and by eight heads of departments in the University of Michigan:

To secure a national as well as a local view of the situation, the following questions were sent to 140 academies and 140 large high schools, selected from 44 states according to representative population, and to 60 small high schools in the accredited list of the University of Michigan.

1. What positive requirements in science do you advocate? How much of each?

2. Would you favor one year of either Physics, Chemistry, or Biology, with laboratory work, in A. B. and Ph. B. courses, and Physics with either Chemistry or Biology, in all other courses?

3 (a). Have you facilities for satisfactory laboratory work in the three sciences?

(b). Could you easily secure these facilities?

4. Do you favor reducing the requirements in Vergil to six books of the Aeneid?

5 (a). Would you limit the Greek preparation to two years and to Attic prose?

(b). Can two or three books of Homer and the usual Attic prose be taught in two years?

6. Do you favor four years of a foreign language, preferably Latin, in all courses?

7 (a). Do you favor one or two modern foreign languages in the A. B. course?

(b). How much?

8 (a). How much History would you recommend in the different courses?

(b). Should the History of Greece and Rome be taken as a substitute for General History?

9. Do you favor Solid Geometry in all courses?

10. Which University is nearest your ideal in its requirements for admission? What changes would you make?

11 (a). Do you favor 15 prepared and 5 unprepared lessons per week for all secondary schools?

(b). What is your present system?

12. How would you modify Table IV of the Committee of Ten Report, in order to prepare best for college and for life?

The following table gives the answers of 36 Academies (A), 18 east of Ohio; of 35 large High Schools (B), 17 east of Ohio; and of 14 small High Schools (C), in the accredited list of the University of Michigan.

QUESTION I.

	A	B	C	COMBINED.
Physics,	19	29	10	58
Chemistry,	14	24	7	45
Botany,	5	11	6	22
Biology,	2	11	4	17
Physiology,	8	9	7	24
Zoölogy,	1	5	1	7
Physiography,	3	4	4	11
Geology,	1	1	2	4
Years of Science for A. B. and Ph. B. Courses,	1.2	1.3	—	1.25
Years of Science for other Courses,	1.8	2.6	—	2.2

QUESTION 2.

Yes,	15	12	14	41
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QUESTION 3 (a).

Physics, Chemistry and Biology,	10	16	5	31
Physics and Chemistry,	11	9	7	27
Chemistry.	1	3	0	4
Physics,	0	4	0	4
No Science,	2	3	2	7

3 (b).

Yes,	8	9	4	21
No,	7	3	3	13

QUESTION 4.

Yes,	21	25	10	56
No,	5	7	2	14

QUESTION 5 (a).

Yes,	15	11	9	35
No,	16	19	2	37

5 (b).

Yes,	6	5	4	15
No,	21	24	7	52

QUESTION 6.

Yes,	16	14	2	32
No,	11	14	10	35

QUESTION 7 (a).

Yes,	27	21	9	57
No,	1	7	3	11

7 (b).

One Year,	5	8	2	15
Two Years,	10	12	8	30

QUESTION 8 (a).

Years of History,	1.6	1.7	1.8	1.7
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8 (b).

Yes,	7	6	2	15
No,	13	10	7	30

QUESTION 9.

Yes,	13	12	12	37
No,	16	18	1	35

QUESTION 10.

Harvard,	8	13	1	22
Michigan,	1	4	2	7
Cornell,	2	2	0	4
Chicago,	1	1	0	2
Princeton,	2	0	0	2
Stanford,	0	2	0	2

California,	0	1	0	1
Johns Hopkins,	1	0	0	1
Yale,	0	1	0	1
QUESTION 11 (a).				
Yes,	9	11	3	23
No,	13	8	4	25
11 (b).				
Average prepared lessons,	16.9	15.9	17	16.6
Proportion using any unpre- pared lessons	.48	.65	—	.56

VIEWS OF ACADEMIES

Principal W. H. Butts

“The aims of this paper are two: first, to show what Academies are doing, what they can do, and what their wishes are in regard to the establishment of uniform and unified courses of study, preparing at the same time for college and for life; second, to give a short account of organized movements toward uniformity in different parts of the United States, and to indicate what action may be taken at once in the North Central States.

To secure information for the first topic, circulars containing twelve mooted questions were sent to principals of representative schools in forty-four states. The percentage of replies received from the different sections may indicate a greater or less advancement in educational aims and methods, or it may simply show where there is the most pressing demand for change. In Delaware, New Hampshire, Vermont, and Oregon all the principals responded, and expressed great interest in uniting all sections in a system which would render secondary instruction more uniform, less expensive, and more effective in preparing for college and for life pursuits. In Michigan 75 per cent. responded; in Ohio 70 per cent.; in Pennsylvania 67 per cent.; in Connecticut, Kansas, Massachusetts, Mississippi, and New Jersey 50 per cent.; in Illinois, Indiana, New York, Texas, and Virginia 30 per cent., and in Missouri 20 per cent. From other states no answers were received. None of the great preparatory schools east or west failed to respond.

Replies from the South and from a large part of the West showed less interest in current educational problems and in the development of a national system. The small number of responses from the West and Southwest may be explained by the fact that academies have not developed and attained prominence in those sections as they have in New England and the Middle States, owing to the system of state universities and graded schools established and, in many cases, fostered by state grants and special privileges. The feeling in the schools and in the colleges may possibly be expressed by the president of a leading Western university who says, "We are not so much interested in having uniformity of requirements for admission to American universities as we are in having the standards advanced along certain lines in our own state, so as to give to the university course greater symmetry and efficiency." Whether this is the broadest view of this great question, seems to me doubtful. State control and state supervision, modelled on the Michigan plan, have created educational systems in a large part of the United States, more complete in many ways and more closely articulated than those of Germany or England. The victories won and the lessons learned in developing these state systems, only prepare the way for national unity and uniformity. The colonial days in educational development are fast passing away. The report of the Committee of Ten may be well called the first constitution of Educational America. What we need now is ratification and wise legislation. This is no time for state rights and sectional interests to stand in the way of national development.

In response to the question as to what sciences should be required for admission to American universities, 39 per cent. of all answers favored one year of physics for all courses,—17 per cent. favored chemistry, 17 per cent. physiology, 6 per cent. botany, 3 per cent. geology, 3 per cent. physical geography, for all courses. Physics and chemistry were favored by 16 per cent., physics and physiology by 6 per cent., physics or chemistry, by 3 per cent., physics for A. B. course with chemistry

added in other courses by 3 per cent. Of all answers, 4 per cent favored physics, chemistry, or biology, with laboratory work in the science chosen, for the A. B. course, and physics with either chemistry or biology for all other courses. Among the individual replies two are especially interesting. The head-master of one of the largest eastern schools, who was a member of the committee of ten and who left his imprint on table four, would require physics 160 p., botany, 114 p., and physiology 76 p. The dean of the official preparatory school of the University of Chicago, would require one year of physics, with laboratory work for all courses, and place one year of chemistry, one-half year of botany and one-half year of physiography among optional subjects. Only 8 per cent. of the answers objected to physical science as a positive requirement. Among studies of equal disciplinary value the true criterion is undoubtedly the use that may be made of the subject in future work. We can not go to the extremes of Francis W. Parker or Pres. Jordan, but we must acknowledge that they are developing a great principle. The days of taking studies merely for discipline have passed away. If all students were required to present one of the three laboratory sciences and then allowed to present other sciences, preferably with laboratory work, chosen with a view to use in college and in after life, secondary schools would teach the laboratory science or sciences for which they have the best teachers and the best facilities, so that small schools as well as large would send men to college with good laboratory methods and with the maximum amount of useful knowledge.

In response to the question of facilities for satisfactory laboratory work, 33 per cent. answered "no" without qualification, 30 per cent. had facilities in three sciences, 33 per cent. is only two, and 3 per cent. is only one. Thus 63 per cent. had facilities in at least two sciences. Of those who did not have facilities 53 per cent. could easily obtain them and 47 per cent. could not.

In the Latin requirements 81 per cent. favored reducing Ver-

gil to six books of the Aeneid, one stipulating that this should not mean a reduction in Latin requirements, and another reserving all after the sixth book for sight work. The Georgics and Bucolics were generally condemned as too hard or too unprofitable.

In Greek 44 per cent. would reduce the requirement to two years, and to Attic prose, 47 per cent. favored three years with Homer, three per cent. two years with Homer, three per cent. three years without Homer, and three per cent. would require no Greek. Answering the question, "Can two or three books of Homer and the usual amount of Attic prose be taught in two years?" 19 per cent. said "yes," 50 per cent. "no," and 31 per cent. "doubtful." This makes 81 per cent. unfavorable.

Replying to the question, "Do you favor four years of a foreign language, preferably Latin, in all courses?" 52 per cent. answered "yes," 17 per cent. favored four years of a modern language, and 32 per cent. were opposed to four years of any foreign language in all courses. One-fourth of the opposition favored two years of Latin in all courses. Some voting in the affirmative stipulated that the language should be begun in the grammar grades. Judging from what the schools are now doing, it seems that this favorable majority expresses rather a preference than a present possibility, or that some understood "four years of a foreign language" to include two years of Latin and two years of a modern language.

For the A. B. course 57 per cent. favored one or two years of one modern foreign language, 39 per cent. preferred two languages for the same time, 4 per cent. objected to any for the A. B. course. Sight reading of simple prose was the common test.

For history requirements, 39 per cent. favored two years' work in American, English, Grecian, and Roman history for all courses, 39 per cent. would require about one and one-half years of American, Grecian, and Roman history for the A. B. course, and the same amount of American and English history

in other courses. General history was opposed by many as difficult and unprofitable in secondary schools. Several wished to adopt the Committee of Ten plan, and some were doing additional history work in their English classes.

Solid geometry in all courses was opposed by 55 per cent. All the leading preparatory schools in the East, with two exceptions, voted in the negative. In the Central and Western States the majority were favorable.

In response to the question as to which university was nearest the ideal in its requirements for admission, 53 per cent. of those who had any opinion favored Harvard, 13 per cent. Cornell, 13 per cent. Princeton, 7 per cent. University of Chicago, 7 per cent. Johns Hopkins, 7 per cent. University of Michigan.

On the question of fifteen prepared and five unprepared lessons per week, 41 per cent. were favorable and 59 per cent. opposed. Present practice varied from 15 to 24 prepared lessons, the average being between 16 and 17. Exeter favored 16 p., Andover 16 to 18 prepared lessons, 55 minutes each, while Lawrenceville stood by the Committee of Ten and claimed that 20 prepared lessons could be learned, if necessary.

Only a few accepted the invitation to criticise and improve Table IV., of the Committee of Ten report, as a preparation for college and for life. Some would begin the high school course one year sooner, some would place physiology earlier and include economics in the senior year. Two would give more science, drawing, writing, and speaking, instead of so special an appeal to the memory.

Considering the answers from the secondary schools in connection with letters from the presidents of twelve of the leading colleges and universities, and taking into account the discussions and resolutions of the New England Association of Colleges and Preparatory Schools, the Association of Colleges and Preparatory Schools in the Middle States and Maryland, the Headmasters' Association, the Association of Teachers of English in the North Central States, and the Commission of Colleges in New England on Admission Examinations, it is evi-

dent that the plan which will most easily and quickly unite the East and West in a uniform system of admission to college will be based on Table IV., of the Committee of Ten Report. If the colleges and schools, after free discussion in inter-state associations, agree on elementary requirements which all schools can meet while they are, at the same time, giving to a great majority of their pupils final preparation for their life work—if they also name advanced requirements from which students preparing for college may have a choice according to the degree for which they are studying, basing their choice upon the utility of the subjects for future work, then the secondary schools can retain their individuality and teach those advanced studies for which they have the best facilities. Under this plan, the courses in Table IV. might in some colleges lead to the A. B., Ph. B., B. S., and technical courses as recommended by President Schurman, of Cornell, or the first two might lead to the A. B. course and the last two to the B. S. course under the Harvard system.

Since the first meeting of the New England Association of Colleges and Preparatory Schools in 1885, interstate coöperation has done much for the states east of Ohio, but little has been attempted in the West. It is time for the West and South to do vigorous work in coöperation with the Eastern associations. Letters from the leading Western universities and secondary schools favor this organized action. With the largest percentage of school attendance of any section of the United States, and with the closest articulation and most sympathetic relations between secondary schools and universities, the North Central States are in a peculiarly favorable position to lead in establishing national unity and uniformity in educational matters. In order to wield any considerable influence abroad the North Central States must come to some agreement at home. Something like Japanese unity must replace Chinese diversity in aims and methods which seems to exist when we study the educational systems of the three sister

states, Ohio, Indiana, and Michigan. Even now some of us can not see distinctly across state lines.

By adopting Table IV. as the basis of united action, and by free discussion in inter-state associations and conferences between such associations, rapid advance toward greater uniformity and higher ideals may be made. As soon as experience teaches that any study in Table IV. is less valuable than some omitted subject, or that the arrangement of studies and the allotment of time are not productive of the best results, changes can be agreed on by a conference or by a committee similar to the Committee of Ten. With some certificate system of admission in states or in larger sections, uniformity can be hastened, and by the common experience and progress of all, an American ideal in secondary and higher education can be worked out by American methods on American soil."

Views of the large High Schools, by Principal F. L. Bliss, of the Detroit High School, will be given in the next issue of the SCHOOL REVIEW.

VIEWS OF NORMAL SCHOOLS

Professor E. A. Strong

"The important point is to secure a general agreement as to what education should be and should do for a people. This unity of view will slowly but surely produce the desired unification and the change will be enduring. When we know what we want, and know that we can have it only by educating for it, we have in operation the only efficient cause which can secure the desired effect.

We must view education as a whole. It is not enough to scan the devious line which now divides the American high school from the American college or university. No considerable improvement in higher education can be effected which does not carry with it important changes in secondary and elementary education. We must concede the fallacy of the old opinion that the improvement of higher instruction.

will necessarily secure the improvement of elementary instruction. This can only be true where there is some vital and working relation between the university and the elementary school.

This Club can do nothing to further the unification of the requirements for admission to college comparable with an immediate adoption of the Report of the Committee of Ten as a *working basis* for further unity and improvement."

VIEWS OF PRESIDENTS OF COLLEGES AND UNIVERSITIES

President Eliot, Harvard University

"In the first place, it seems to me that the most hopeful method is to adopt as temporary outlines of desirable groups of studies for secondary schools, the four programmes recommended by the Committee of Ten. Those programmes may serve a useful purpose for perhaps ten years. As soon as the elementary schools are substantially improved, in accordance with the recommendations of the conferences, it will be possible to improve greatly the committee's programmes for secondary schools ; but for temporary use they may be said to afford the best general guidance now accessible.

Secondly, I think that colleges and scientific schools should, if possible, be induced to accept any one of these four years' courses of study as qualifying satisfactorily for admission to corresponding courses in the colleges and scientific schools, and furthermore to raise gradually, and with adequate notice, their own standards of admission to the level of these programmes subject by subject.

Thirdly. The practicable mode of doing this seems to me to be as follows: Let a group—the larger the better—of American universities maintain admission examinations in *all* the subjects which enter into those four programmes. The list would be as follows :—

Subjects.	No. of school years devoted to each subject.	Probable number of question-papers in each subject.
Latin	4 years	3 papers
Greek	2	2
English	4	3
German	4	2
French	4	2
History	4	3
Algebra	2	2
Geometry	1½	2
Trigonometry	½	1
Ph. Geography	1	1
Botany	1	1
Zoölogy	1	1
Anat. Physiol. and Hygiene	½	1
Geology	½	1
Physiography	½	1
Physics	1	1
Astronomy and Meteorology	1	1
Chemistry	1	1
		—
		29

Let every institution belonging to the group, and as many other institutions as can be brought to act with them, declare each for itself how many and what examinations it will absolutely require for admission, and how many and what choices among the remaining subjects it will permit, taking care, however, not to demand more in the sum of prescribed and optional subjects than the total represented in any one of the four programmes of the Committee of Ten. Each university or college might make its own arrangements as to the use it would make of the complete set of examinations; but all would maintain the same standard in each subject, and would permit any and every subject in the list to count towards admission in some way or other. By means of large options taken from a uniform and ample list of studies the individuality of different schools and of different colleges can be preserved.

The requirements for admission to Harvard College may perhaps indicate the manner in which options can be used. Certain elementary subjects are absolutely required for admis-

sion, and then wide choice is given among several advanced subjects. For national purposes a selection of both prescribed and optional subjects wiser than the Harvard selection might be made; but the general plan of the examinations offers a good type, because it permits a tolerable range of choice. The programmes of the Committee of Ten of course suggest that the range of choice should be made wider, the prescribed subjects and parts of subjects being limited to those which are common to all four programmes, and a considerable addition being made to the number of the optional advanced subjects.

I will add a few remarks on two or three matters of detail.

At Harvard we are satisfied that a great deal is gained for language instruction in secondary schools by making reading at sight a more important part of the admission examination than acquaintance with certain specified texts. The reading of prescribed quantities of Latin, Greek, French, or German should, in our opinion, play a subordinate part.

It is true that the substitutes for Greek which are permitted in the Harvard requirements for admission are more difficult than the Greek, and take more of the pupil's time. This was intentional with the Harvard faculty. The result has been, as I pointed out in my report for the year 1891-92, pages 17 and 18, that the persons who have thus far entered Harvard College without Greek have made records in college which are distinctly above the average, and have proved conclusively that they are abundantly able to profit by college life, and win a standing which on the average is above that of those who entered with Greek. I believe that accepted substitutes for the traditional subjects should never be made easier for the pupil than the traditional subjects. That is not the way to win respect for the new subjects, or to prove their equivalence to the old subjects. Great care should be taken when History, the Modern Languages, Sciences, and English are accepted for admission to college, that the requirements in these subjects should be unquestionably equal in quality and quantity to the requirements in Latin, Greek, and Mathematics. Thus, the

requirements in English, taught four years as proposed in the programmes of the Committee of Ten, should be as serious as those in Latin, taught four years in the same programmes. We should not aim to open easy ways into the colleges and scientific schools ; but we should try to open various new roads, all of which require as much energy and judgment to travel them successfully as the old roads require.

I think the two most difficult departments to deal with will prove to be English and History ; because I observe that the experts in these departments are not yet prepared to lay out a course of study for secondary schools which shall be as long, thorough, and difficult as the courses of study in Latin, the Modern Languages, Mathematics, and the Sciences.

I may add that the Harvard requirements in Physics, which have been in use for the last eight years, have worked admirably, and certainly point the way to a satisfactory solution of all questions about requirements in the sciences."

Dr. Butler of Columbia College

"I favor a requirement in laboratory physics on the ground that this science can be most readily taught and most readily tested. It also involves training in accurate measurement, which is one of the chief benefits of scientific teaching at that age. I should, however, allow alternatives, say chemistry, zoölogy, and botany, in order that schools having varied equipment and various local needs to meet might be under no disadvantage in preparing students.

I would require a minimum of one year of physics, chemistry, or biology, including laboratory work, in all college courses of whatever character.

I favor abolishing the present requirements in Latin entirely, and substituting therefor an ability to read at sight easy Latin prose. The ability that I have in mind ought to be gained by the average pupil with three years of good teaching.

I would limit the Greek preparation to the ability to read at sight easy Attic prose. Such ability could be gained in two

years. As to the second part of this question, I beg to say that I understand, on the best authority, that the three books of Homer and the easy Attic prose are in very many cases taught in two years at present.

I do not believe in requiring four years in any foreign language in all college courses, or in any college course. Ample provision should be made for instruction in Latin, Greek, French, and German, and opportunity given to the student to select freely among them.

All candidates for the degree of A. B. should be able to read readily French and German. One of these can be required for admission and the other taught in college.

I should make the study of history and solid geometry in college an elective matter entirely.

The requirements for admission to Harvard College are the ones that, in my judgment, best preserve the proper relations between the several subjects ; that are best adapted to test the real ability of the candidate ; and that are best calculated to assist in improving the work of the secondary schools. These requirements, however, seem to me to fail in that they postpone to too late a date, by at least one year, the age of admission to college. If I had the power I should alter them in two respects : First, by decreasing in difficulty the alternative now offered for Greek, which seems to me unduly severe ; second, by reducing the quantity of work required so as to permit students to enter college a year earlier than now.

Secondary schools can easily carry more work than fifteen prepared and five unprepared lessons per week. The total of lessons prepared and unprepared should not be less than twenty-five."

President Schurman, of Cornell University, considered the unification of requirements for admission to American universities the next question which educators should face, and thought that this should be accomplished by a committee representing the colleges and schools, as in the case of the Committee of Ten. He was not convinced that science should be required

for admission, as we are still experimenting with the art of teaching science. If required, not more than one year's work, two or three periods per week, should be demanded, and the choice should not be restricted to physics or chemistry, but botany, entomology, and vertebrate zoölogy should have a chance. He would favor for A. B. and Ph. B. courses, one year of some science, with laboratory work, and more for the B. S. course, but would not require physics of a student specializing in natural history. For the humanistic courses, A. B. and Ph. B., he would prescribe an ancient classical language and one modern foreign language. Latin might profitably be required for the B. S. course on account of its value for linguistic training, but should yield to modern languages in college.

History should not be prescribed in any except the humanistic courses and only as an elective in the A. B. course when both Greek and Latin are required. He would not require solid geometry in any course, except where needed for subsequent work. The principle of the *using* of each study for subsequent studies, furnished the criterion. He was inclined to think the third course of table four, Committee of Ten report, a mistake except in preparing for scientific schools.

President Patton, of Princeton, would limit Vergil to six books of the Aeneid, if other authors were read, would prefer three years preparation in Greek, and require two modern languages for the A. B. course. He would require solid geometry in all courses and would not allow the history of Greece and Rome as a substitute for general history. He considered the requirements for admission to Princeton and Yale nearest the ideal.

President Harper, of the University of Chicago, would require at least one year of laboratory physics in all courses, would reduce Vergil to six books but would not limit Greek to two years and Attic prose. He would require solid geometry, American and general history in all courses, and a reading knowledge of two modern languages for the A. B. course.

President Adams, University of Wisconsin, did not consider the Committee of Ten scheme workable in Wisconsin at present, as this would necessitate the throwing out of some things to which the schools of Wisconsin are wedded. The schools give good instruction in science but poor in history and languages. Most of the secondary schools have laboratories for teaching physics, chemistry, and physiology. Instruction in German is generally poor and less than half the schools give a two year course in Greek. He did not think it practicable to get either modern language in addition to Greek and Latin for the A. B. course. The ideal university should not teach beginners in any language. He would go just as near the Conference Report in history as possible.

President Jordan, Stanford University, makes no requirements in any particular subject, except English composition, and accepts no work in any subject unless he can build upon it. He would leave the choice of sciences to individual tastes and needs, but would accept no science work except done in the laboratory for at least a year. Credit is given in Latin for two years' work or more. Particular books and authors are not essential. Solid geometry is favored for most students, and any *real* history is preferred to general history. President Jordan believes the Stanford system the only permanent and tenable one, and says that nothing would induce the faculty to change it.

President Baker, University of Colorado, favored one year of physics for the A. B. course, with the addition of chemistry and biology, one year each, for the B. S. and Ph. B. courses. He would reduce Vergil to six books of the Aeneid and was inclined to limit Greek to two years and to Attic prose. He would not require solid geometry for all courses nor allow the history of Greece and Rome as a substitute for general history.

President Jesse, University of Missouri, considered the Eclogues of Vergil of little value from any point of view and the Georgics too difficult for the high school. He had little

faith in general history in the high school and would substitute for it the history of any of the greater nations, ancient or modern. He favored science *with laboratory methods* and would exclude teaching by lectures.

President Seelye, Smith College, considered the most successful method of securing unity and uniformity in the requirements for admission to college, to be the formation of associations like the New England Association, where all subjects of mutual interest could be fully and freely discussed. By means of the New England Association greater unity and uniformity have been secured in the New England colleges. Smith College has, as far as it consistently could, accepted the recommendations of the Association.

President Irvine stated that Wellesley College favored uniformity in so far as it tended to raise standards. They had already adopted the entrance requirements in literature, English and modern language, recommended by the Commission of the N. E. Colleges. The college admitted with and without Greek, and permitted a science to be offered in place of the third language. Colleges of higher rank might accept only the first two courses in Table 4, while colleges of lower rank might profitably accept all four of the programmes.

VIEWS OF DEPARTMENTS IN THE UNIVERSITY OF MICHIGAN

Professor M. L. D'Ooge argued that any such unifying and simplifying of requirements for admission to American universities as should result in only *one* set of entrance requirements for all students, and for all courses would be impossible, or if possible, would be radically opposed to well established principles of modern education, particularly the elective principle. Recent discussions emphasize the fact that all studies have not the same educational value. Local conditions should influence but not control the colleges in formulating entrance requirements. These should be *equivalent* but not *identical*, and the high school should have a certain freedom of choice. Continuity in each subject should be secured, and linguistic,

mathematical, scientific, and historical subjects should have proper representation, allowing freedom of choice by fixing maximum and minimum requirements and by accepting equivalents. This adjustment will not lower standards, but will enable a student preparing in any school to enter any college without conditions.

Professor Calvin Thomas said that the present chaos of school courses was due, in part at least, to an unwise multiplication of bachelor's degrees. This had diverted discussion into wrong channels, and made the course and the degree more important than the boy or girl. The pupil is required to choose a course at an age when it is impossible for him to choose wisely. It is our business as teachers to know what is best, and to recommend it ; in the main, parents will thank us for having an opinion, and will be glad to follow our counsel. The studies that are best worth pursuing in school are mathematics, foreign languages, English, history, and natural science. A course wisely made up out of these will be best *for the boy*, no matter whether he is going to college or not, and what is best for life is the best possible preparation for college. If this were not so, the colleges would be in grave need of reforming. Let us, therefore, work toward a unified preparatory course, which shall afford room for choice, as between more or less of certain subjects, and between ancient and modern languages. It is time to recognize that for educational purposes a foreign language is a foreign language ; if well taught, one is as good as another.

Prof. F. C. Newcombe thought that a unified course could not be prepared by giving to languages more than one-half the whole time, and to natural sciences but one-twelfth, nor by putting so many sciences into a course that there would not be sufficient time for two foreign languages. The fact that the natural sciences can fulfil their educational functions only when given by the laboratory method, precludes the possibility at present, at least, of introducing more than three sciences into the average school, and probably in many schools not more than two sciences can be given. The majority of schools

can teach two of the sciences—physics, chemistry and natural history—by the laboratory method. Since the aspect of nature is two-fold, physical and biological, it is reasonable to ask that representation of both should stand in the curriculum. Only in this way can the unity of nature be inculcated. Replies from 80 of the 125 diploma schools of the University of Michigan indicate that 76 are now, or soon will be, ready to use the laboratory method in teaching botany. Last year 51 used the laboratory method, 23 adopting for the first time a laboratory manual.

Prof. W. W. Beman argued strongly for solid geometry in all high school courses. The pedagogic value of the study is shown by the fact that it is required in the courses of the German gymnasium, real-gymnasium, real-schule, and even in the bürger-schule, of the French collège and lycée, and of the Italian secondary schools, always in connection with secondary studies. In the lycée it is taken before the trifurcation into philosophical, mathematical, and scientific courses. Letters from Harvard, Wisconsin, Minnesota Universities expressed views favorable to confining solid geometry to secondary schools. Testimony was presented that not twenty-five schools in New England regularly taught the subject, while in the West it was taught almost as generally as plane geometry in New England. The Committee of Ten conference unanimously favored the study in all courses. For twenty-three years accredited schools of Michigan have taught successfully all the geometry in one year. Western colleges and universities have generally adopted the requirement and secured the full work. Great embarrassment would be felt if solid geometry had to be taught in western colleges. The university course in mathematics would be thrown out of adjustment and a larger force of instructors would be required. To throw out solid geometry from requirements for admission would be a retrograde movement.

Prof. H. S. Carhart showed the great educational value of physics and urged that the study should be begun in the high-school before the study of language has blunted the taste for

science. He objected strongly to placing physics before the last year in the secondary school, on the ground of the greater need of mathematics and the greater difficulty of the subject.

Prof. R. Hudson urged the teaching of American history in the high-school, as a duty owed to the state. He asked for general history in all courses in order to put the present into relation with the past and to form some idea of that social evolution, one stage of which the students are witnessing. The study of general European history is necessary in order to understand the elementary history of any European nation. Special histories should be taught as parts of the general movement. American and general history should be taught in all courses and required of all students by the University.

Prof. I. N. Demmon presented the recommendations of the Association of Teachers of English for the North Central States, agreed upon at their first conference held in Chicago in July last. He urged the importance of differentiating more clearly the studies called literature, composition, formal grammar, and formal rhetoric. At present there is too much confused and aimless instruction in these subjects, due to lack of differentiation and coördination. Much reading and memorizing of good literature was valuable in forming a correct taste in both language and literature. The reading of good authors should be connected, within reasonable limits, with the study of their lives and with a history of their times. The teacher should be a guide and not intrude himself between the pupil and the author. In composition the student should be led to think for himself and give spontaneous utterance to what is in his heart and mind. The proper place for formal grammar and formal rhetoric is near the end of the high school course.

Prof. B. A. Hinsdale held that while we may not make the wisest choices from the riches of modern knowledge, we can hardly make bad ones. He concluded that modern studies have not even yet secured as large a place in our educational work as they will ultimately occupy. The old studies that

have descended from antiquity will not pass out of the school, but they must consent to share some of the diminished space that they now occupy with the competing studies. Literature and history, which run along the line of national life, will receive larger recognition than has yet been accorded them. The Greeks, who were the ablest race intellectually, nourished their minds wholly upon a vernacular culture. Against the idealizing sentiments set forth by some, it must be remembered that England and America are much less given to theory and speculative reasoning than the continental countries, and that they persist in adhering more closely to the normal lines of historical development. Our educational future must be an outgrowth of the past, and not an exotic transplanted from a foreign soil.

A WESTERN ASSOCIATION

A committee of three was appointed to join with President Angell of the University of Michigan, President Harper of the University of Chicago, President Adams of the University of Wisconsin, and President Rogers of Northwestern University, in a call for a meeting at Evanston, Ill., March 29-30, 1895, to form an association of colleges and secondary schools in the North Central States. Principal Boone of the Michigan State Normal School, Principal Butts of Michigan Military Academy, and Principal Greeson of the Grand Rapids High School, were appointed to represent the secondary schools in making this call.

Orchard Lake, Michigan

William H. Butts